Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

be understood in its details, without the aid of diagrams, as exhibited to the Academy.

The instrument is designed to register, by itself, for twelve hours at a time, and at such an interval its registrations require to be read off and noted.

Dr. Todd read a letter from C. T. Barnwell, Esq., containing some observations on two passages of Archimedes, *De Sphæra et Cylindro*, where commentators appear to have been strangely misled.

The first occurs in the Demonstration of Proposition I. of the first book.

In the demonstration of this proposition it is assumed that the triangles ABΔ, BΓΔ are together greater than the triangle AΔΓ (fig. pag. 79, Oxf. ed. fol. 1792).

Dr. Barrow (in whose edition this is Prop. XII.) says, "liquet . . . . quia $AB+B\Gamma > A\Gamma$, et altitudo *communis est*," which is evidently not true, unless the triangle ABΓ were equilateral.

In the German edition of J. C. Sturm (where this is Prop. IX.) the following most extraordinary inference is drawn from Euc. I. 24, viz., that, since (fig. in p. 80) $\Delta Z > \Delta E$, ΓΔ common, and the angle $\Gamma\Delta Z >$ the angle ΓΔE, the *triangle* $\Gamma\Delta Z >$ the triangle ΓΔE.

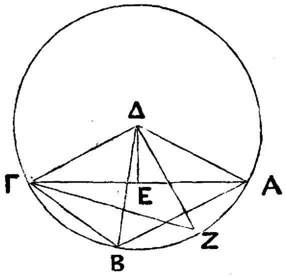
In the Oxford edition, the demonstration of Eutocius is condemned as invalid ; but the editor, without stating the nature of his objection, contents himself with adding "sed res ipsa satis patet."

Flauti, of Naples (Corso, vol. I.) observes, and rightly, that the line ΔZ should have been directed to be drawn in the plane of the triangle AΔΓ, and states what he considers to be the objection of the Oxford editor, viz., that the triangle ΓΔZ will not include the triangle ΓΔE in the case of the angle $A\Delta B >$ the angle AΔΓ, and that it cannot, therefore, be inferred generally, that the first of these triangles > the second. He then subjoins a different demonstration.

Hauber, in his excellent edition of this treatise (Tubingen, 1798), appears also to admit the objection; for he gives another demonstration of the assumption in question, which is, perhaps, preferable to Flauti's. Peyrard does not attempt any explanation or demonstration.

It is, however, very remarkable, that not one of the editors seems to have observed that, in the subsequent application of Prop. X. (see the Corollaries at the end of Prop. XIII. p. 86) the triangle AΔΓ is composed with the *lesser* of the two conical surfaces intercepted between the lines AΔ, ΔΓ; and consequently, that the lesser of the two segments, into which the circle is divided by the line AΓ, is the one which should have been bisected in B.

The figure in p. 80, when corrected accordingly, will be this:



where, since the angle ΓΔZ (= the angle ΓΔB) is $> \Gamma\Delta E$, and $< \Gamma\Delta A$ (since $\Gamma B < \Gamma A$), the triangle ΓΔZ will evidently include the triangle ΓΔE, and the demonstration given by Eutocius will be valid. The only objection now to be made to it is, that it is unnecessary; for, since $\Gamma B + BA > \Gamma A$, and the perpendicular on ΓB or BA is also $>$ that on ΓA, it at once follows that the triangle $\Gamma\Delta B$ + the triangle $B\Delta A >$ triangle ΓΔA.

In every edition, the point Z appears to be in the circumference of the circle ΓBA, which seems to have misled Sturm and, perhaps, the Oxford editor also.

In a modern German edition of the whole of Archimedes, by Nirze (Stralsund. 1824), Hauber's demonstration is adopted, but in a less advantageous form, and with an erroneous figure.

The second occurs in the Demonstration of Proposition V. of the second Book.

At the foot of page 157, Oxford edition, it is said: "Since the ratio of ΔΛ to ΛX is given, as well as that of PΛ to ΛX, the ratio of PΛ to ΛΔ is also given." But this is untrue with respect to the first of these ratios, which is not given. Indeed, if it were, the analysis would here be at an end; for, since (p. 157, lin. penult.) ΔΛ:ΛX :: BZ:ZX, the ratio of BX:ZX would be given, as also ZX (since BZ is given) and the point X.

But it is remarkable that this corruption is as old as the time of Eutocius; for he has been led into an error so gross, that it is hardly possible to imagine how so able a commentator could have fallen into it. This error is no less than the assertion (page 160, line 25) that BX is given, *because its extremities are given;* whereas the whole object of the analysis is to find the point X.

This corruption of the text has been allowed to pass unnoticed into the Oxford edition, though it had been corrected in the old Latin translation, in the edition of 1544, as well as in the Greek text of that edition, except that in this latter there is an error of ΔΛ for PX.

Sturm, who does not give a regular translation of his author, has avoided the error in the text, but it is retained in Nizre and Peyrard.

Hauber has adopted the correction of the old translation, which is, undoubtedly, just; "since the ratio of PX to ΛX is given, that of PΛ to ΛX is also given."

The President described certain improvements in the construction of the Anemometer, and exhibited to the Academy the improved instrument.